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Dr. Kirk H. Stone is Assistant Professor of Geography, University of Wisconsin. He is a specialist on Alaska. His many activities include three field seasons for the Department of Interior and service as a consultant to the Department of Interior and to the Bureau of Census on Alaska. Among his other publications on Alaska is a monograph entitled "Alaskan Group Settlement in Matanuska Valley."

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Mr. Robert H. Brown is an instructor, Division of Social Studies, State Teachers College, St. Cloud, Minnesota. He received an M. A. in Education, University of Minnesota.

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VOLUME L MAY, 1951 NUMBER 5

ALASKAN PROBLEMS AND POTENTIALS*

KIRK H. STONE
University of Wisconsin

In the world of today the Territory of Alaska is one of the more important areas. This significance is a product of world tension and the Territory's location, an importance emphasized by the high value of the resources of the area. At the same time, Alaska is poorly understood in general. Thus, our task is to evaluate the Territory's present and future significance. Such understanding may be reached by consideration of the problems and potentials of the area.

Alaska's problems are those of a new and isolated land. Its potentials are those of a strategically located peninsula with valuable natural resources. It is apparent, then, that today's problems and tomorrow's potentials are intricately related. Because of this close relationship, our understanding of Alaska is aided by consideration of the problematic and potential phases of major topics. These are: location, population, agriculture, industry, recreation, statehood, and ignorance.

LOCATION

Alaska's location is the most basic topic in any consideration of the area. To say that the Territory is isolated is trite. Yet, it is true. The larger part of Alaska is a peninsula extending about 800 miles westward from the northwestern corner of North America. Also, about 80 per cent of the Territory is north of 60 degrees north latitude. From Chicago to Anchorage requires as long as two weeks by railroad and steamship via Seattle or by automobile on the Alaska-Canada Military Highway. The actual flying time be-

* Appreciation is expressed for aid from the University of Wisconsin for research upon which portions of this paper are based. This paper was presented at the meeting of the National Council of Geography Teachers, Chicago, November, 1950.

tween the two cities is about 17 hours, admittedly a relatively short time but the distance covered is still great.

Within the Territory there is additional isolation. The name Alaska means "the great land" and the greatness is vertical as well as horizontal. High, snow-covered mountains separate and isolate the flatter areas (Fig. 1); in the south and paralleling the

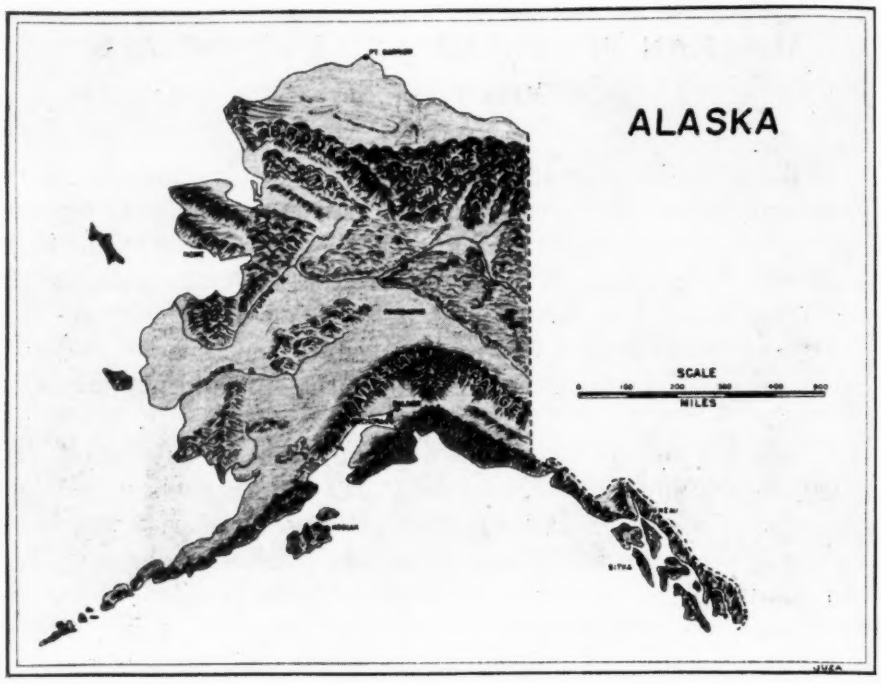

FIG. 1

coast is the Alaska Range and in the north the east-west Brooks Range.[1] In addition, distances between villages and cities are great.

Overcoming isolation, both of the Territory as a whole and of its parts from one another, has been the main problem in the development of Alaska. The milestones in the history of the Territory have been the years when improved methods of transportation were introduced. The changes have been brought about by the use

[1] One of the better sets of maps for classroom demonstration of the internal isolation of Alaska is: U. S. Coast and Geodetic Survey, *World Aeronautical Chart, Nos. 62-64, 76-78, 117-119, 135-138, 190-193,* Scale 1/1000000, Washington, D.C. For examination of the details of Alaskan surfaces see: E. Raisz, *Landform Map of Alaska,* Scale 1/3150000, Office of the Quartermaster General, Washington, D.C., 1948.

of boats, dog-sleds, wagons, automobiles, railroad cars, and airplanes. All of these are used today and the situation is much improved. Yet, the Alaskan feels his remoteness deeply—particularly when steamship connections between Seattle and the Territory are disrupted.

The present and potential value of Alaska's position is high from the military viewpoint. Possibly this value was over-rated by General Mitchell in his oft-quoted statement about Alaska being the key to the world military situation. However, the offensive and defensive importance of the Territory is great now and increases as the ranges of military aircraft are lengthened and as the difficulties of transpolar flight are eliminated. It is significant to note, also, that present military strategy in Alaska is to concentrate the power at a few bases in the "military heartland" between Fairbanks and Kodiak.[2]

A second potential advantage of position is in the Territory being a "buffer state." If the present anti-Russian feeling remains strong, some might contend, it would be well to have a strong, permanently populated Alaska between Siberia and continental United States. Perhaps so. However, it is suggested that the development of the Territory primarily for the creation of a political cushion may not only lead to impermanence of population there but, also, to an added liability of additional persons to be protected in time of hostilities.

POPULATION

Alaska is thinly populated. At present the total is about 129,000 people.[3] In a few small urbanized areas, like Anchorage and Fairbanks, the densities may be as great as 1,000 persons per square mile. At the agriculturalized Matanuska Valley, 50 miles northeast of Anchorage around the village of Palmer, and in the farming area adjoining Fairbanks the average densities are possibly 25 people per square mile. However, considering the total population in an area one-fifth as large as the United States the average density is about 1 person per 4 square miles. Such a density is, of course, low. This fact, plus the knowledge that there are relatively large areas that are uninhabited has led to the contention

[2] Alaska: Airman's Theater, *Time*, November 6, 1950, pp. 28-29 (map p. 29).
[3] The figure 128,643 is the official population as of April 1, 1950.

that what Alaska needs most for development is people, that is, additional *permanent* settlers.[4]

The present population is in small clusters which, on a map, form broken wavy lines.[5] Perhaps 95,000 of the total are white people concentrated in Southeastern Alaska and in the southeastern quarter of the main part of the Territory. Of the natives, the Eskimo are the most numerous and are on the western coast and the western half of the northern coast. The Indians, of which there are nearly as many as Eskimos, are largely in Southeastern along the southern coast, and in the Interior. The few remaining Aleuts are in the Aleutian Islands.[6]

In addition to the problems resulting from thinness, isolation, and heterogeneity of the Alaskan population is a historical background of impermanence and great fluctuation in numbers. Settlement under the Russians began in 1784 at Kodiak Island, off the central southern coast, and by 1845 had spread to Southeastern and to western Alaska. By 1867, when Russia sold Alaska to the United States, there had been established several white settlements along the southern and western coasts. However, these Russian centers were mostly small fur purchasing centers, several of which are now extinct. Total Russian population in Alaska never was more than 800 people and, excepting at Sitka and Kodiak, averaged five or less per village.

Early United States settlement was equally unimpressive. The first villages were small fishing centers in Southeastern and southern Alaska. Then came the great gold strikes. The Klondike of Canada, on the upper Yukon River, was the first center in 1898 and from it mining spread to nearby Alaskan streams. In 1900 was the Nome "rush." In quick succession small "rushes" took place all

[4] Much of the recent Federal activity related to planning for new settlement in the Territory has been based on the premise that Alaska needs people. See Kirk H. Stone, *Alaskan Group Settlement: The Matanuska Valley Colony,* Bureau of Land Management, U. S. Department of the Interior, Washington, D.C., 1950, pp. i-v.

[5] The distribution of population in 1930 is shown in U. S. National Resources Committee, *Regional Planning, Part VII, Alaska,* Washington, D.C., 1938, p. 36. The pattern of distribution in 1950 is the same as that for 1930 in spite of the more than 77 per cent increase in total population during the past decade.

[6] Accurate and well-written discussions of the interesting variety in the Alaskan population are: Merle Colby, *A Guide to Alaska,* Macmillan Co., New York, N.Y., 1940; Ernest P. Walker, *Alaska: America's Continental Frontier Outpost,* Smithsonian Institution, Washington, D.C., 1943; H. B. Collins, A. H. Clark, and E. H. Walker, *The Aleutian Islands: Their People and Natural History,* Smithsonian Institution, Washington, D.C., 1945.

over. When they were over several settlements went out of existence but, by 1920, the present population pattern was developed.

The potential population will probably be greater and still more permanent than the present. How much greater is a question but most of it is likely to be at present centers. Alaskan estimates based on the present population of Scandinavia (because it is in the same latitude) are illogical. In the first place, the Scandinavians were willing to accept more rigorous living conditions than are generally acceptable to present new Alaskan settlers. More important still, Scandinavia had nearby, on the borders of the North Sea, several large commercial and industrial centers, adjacent markets and localities of production which the Territory has not had, lacks now, and is not likely to have in the near future.

The immediate future of the Alaskan population depends largely upon military strategy. If the Territory's military force is to be strengthened there is likely to be continued rapid growth of the population and real population pressure locally, at places like Anchorage and Fairbanks. However, there would be more time to develop stability of the population in general. Alaskans are working for permanence of population and there are no indications that a decline in numbers should be expected in the next decade or so.

AGRICULTURE

The problems of agriculture are said to be numerous. Our inherited notions of ice and snow make it difficult for many to associate agriculture with any part of the Northern Lands. Yet there are perhaps 12,000 acres of cleared land in Alaska at present. This type of land is concentrated in the dairying, general farming, and truck gardening in three areas: the Matanuska Valley, Anchorage, and Fairbanks.[7] In those areas the aspect is often the same as that of parts of Wisconsin, Michigan and Minnesota with the addition of hills or mountains.[8]

Alaskan agriculture must be geared to local situations. These, some would say, are all problems. Climatically, a common hazard is

[7] Approximately two-thirds of the cleared land is in the Matanuska Valley: Kirk H. Stone, *op. cit.*, Figure 26 following p. 75.

[8] The economic phases of Alaskan farming are excellently described in: Bureau of Agricultural Economics, *Some Economic Aspects of Farming in Alaska (with Chief Attention to the Matanuska Valley)*, U. S. Department of Agricultural, Washington, D.C., 1950 and Bureau of Agricultural Economics, *Markets for the Products of Cropland in Alaska*, U. S. Department of Agriculture, Washington, D.C., 1950.

great fluctuation of the beginning and end of a growing season that is short. Another is that the season of early growth of crops is the dry period while the time of harvest is one of cloudiness and rain. Alaskan markets are small and isolated.[8] All soils require the addition of fertilizer for commercial production of crops and some soils are too wet, too shallow, too dry, or too rocky to permit profitable cultivation. Permanently frozen soils present special problems north of the Alaska Range. Clearing costs are high, one to two hundred dollars per acre not being out of the ordinary to get the land free of vegetational cover. Farm labor is difficult to obtain in summer when other work at higher wages is available. Loans, particularly the long-term type, are difficult to obtain at interest rates lower than eight per cent. Production costs are high because of expensive transporation of seed, feed, fertilizer, and equipment. And, there is always the threat of competition by agricultural products raised more cheaply elsewhere in the world, even now occasionally flown or shipped in. The list seems formidable but many an Alaskan farmer is shrewd enough to work "with" rather than "against" these conditions, and to his advantage.

There is an agricultural potential. Possibly an important part is recognizing that Alaska really is not an agricultural frontier land as were Illinois and Iowa in the 18th century. Also, it may be that agriculture will be secondary to industry, rather than the primary occupation, when the Territory is fully developed.

It is known that there is uncleared land upon which crops could be raised and we know where some such areas are.[9] However, there is more to agriculture than just growing crops—they must be raised economically, too. That consideration rules out the possibility of immediate new agricultural settlement in some areas, like the Kuskokwim River valley of central southwestern Alaska. Finally, the technological potential is great. New techniques of farming, new machinery, and new strains of crops are being investigated in the Territory now. The 19B barley, the Arctic seedling potato, and the combination of oats and peas grown together for hay are developments in the recent past. Current Alaskan agricul-

[9] D. L. Irwin, Recommendations for Agricultural Development in Alaska, in *Report on Exploratory Investigations of Agricultural Problems of Alaska,* U. S. Department of Agriculture, Washington, D.C., 1947, pp. 54-58; W. A. Rockie, What of Alaska?, *Soil Conservation,* January, 1946, pp 147-153 and 160; and Kirk H. Stone, *op. cit.,* figure 2 following page iv.

tural research is being increased at an encouraging rate and additional developments are sure to result.

The high cost of transportation may be recognized to have a temporary potential value, also. It has been stated that this cost is a two-edged sword, a charge which causes production costs in Alaska to be high but, at the same time, which acts as a protective tariff against products from outside Alaska underselling locally grown items.[10]

INDUSTRY

Industrial development has been, and is, largely exploitive. The Russians were interested primarily in sea otter and then in fur seals. Immigrants from the United States during the last of the 19th century pursued fish and later gold. For several years now, fish have been Alaska's most valuable developed resource and most of them are caught in big arrow-shaped traps from southwestern to Southeastern Alaska. Recently the annual fish pack value has exceeded 90 million dollars. This is about 10 times the yearly value of minerals recovered, primarily coal and gold, and more than 13 times the annual value of furs.

Some of the problems of industrial growth are those besetting agricultural development. Lack of local financing, high cost of transportation, the high cost or difficulty of obtaining labor, smallness of local markets, and isolation of some of the resources to be exploited. In addition, there are: the lack of developed power sites, insufficient knowledge about resources in some areas, and the necessity of carefully protecting one resource while using another in the same area.

Counter-balancing these problems is the big industrial potential of the Territory. The prime possibility is the development of the accessible great hemlock-spruce forests in Southeastern. The establishment of five or six pulp mills there, so long as the fish are protected also, has been advocated for years by the Federal Government. One pulp unit is to be established in the south, near Ketchikan, within the next year. In addition to the Southeastern forests those of the Interior, tho less valuable, probably are potential sources of pulpwood, also.

Tho water power is little developed, it is estimated that more than 800,000 horsepower is available for harnessing in Southeastern

[10] Stephen B. Jones, *The Arctic: Problems and Possibilities*, Yale Institute of International Studies, New Haven, Connecticut, December, 1948, page 4, footnote 2.

alone. In southern Alaska, the current 22-million-dollar project at Eklutna Lake, near Anchorage, will supply sufficient power for new industrial development in that city. When needed, power may be generated at many sites on the upper Yukon River. Coal is mined in the Matanuska Valley and in the Alaska Range. And, the Navy Department continues exploration for and development of oil fields in the Fourth Petroleum Reserve, the northwestern corner of Alaska.

Other industries have been suggested. Examples are: plants for the processing of the tons of fish offal now thrown away, a coal briquetting installation at the Matanuska Valley coal mines, a cement plant in the Alaska Range, and metallic processing industries where water power is available.

The Federal and Territorial governments have encouraged greatly the development of industry in Alaska. Unfortunately, the establishment of an industry is expensive, generally too much so for Alaskans. Thus, non-Alaskan interests back the big industries and the profits go "Outside," often to Seattle or San Francisco. This situation constitutes a real problem of pride and economy to many Alaskans.

RECREATION

Alaska is a natural recreational area. Physical and cultural variety appear to be limitless. Rough and flat areas alike are photogenic and interesting to the camera fan and casual traveler. Hunters and fishermen find parts of the Territory rich in animal life. Eskimos, Indians, and Aleuts have been encouraged and aided in the development of a souvenir industry.

It may seem paradoxical that a land so richly endowed has problems of recreational development. Nevertheless, it has. Transportational and living costs to and within Alaska are relatively high, housing facilities are scarce or may seem to be relatively crude, and many historic or otherwise interesting localities or features are unmarked or without guide service.

Steps are being taken to develop the recreational potential. The Department of the Interior is encouraging more visitors to go to McKinley Park, surrounding the highest peak in North America, and is connecting the park to the Territorial road system in order to supplement the railroad service. The Department also is encouraging and planning for the expansion of tourist facilities in Alaskan settlements, along the roads, and on the Alaska-Canada

Military Highway.[11] Within Alaska, too, the realization that the recreational potential is nearly limitless in variety and high in value has inspired Territorial businessmen to action. They are now cooperating with the Alaska Development Board in the preparation of plans to expand the trade of tourists and sportsmen.

STATEHOOD

Statehood is an electrifying topic both Inside and Outside of Alaska.[12] It has its own flag, the Big Dipper and the Pole Star on a field of blue. As a Territory its governor is appointed by the President of the United States. Representation in the United States Congress is by a delegate in the House of Representatives who may introduce bills but may not vote. A Territorial Legislature is composed of elected persons from each of the four judicial division.[13] However, many of the legislature's activities are subject to approval by the United States Congress. As United States citizens Alaskans pay all Federal taxes and this, plus the lack of vote by their one Congressional representative, leads many of them to favor statehood. In addition to this logic there is the sentimental factor of "coming of age" politically. This force is a powerful one both Inside and Outside. Alaskan statehood has been proposed in the last three congresses and will be resubmitted to each new congress. The Department of the Interior favors statehood and both the Democratic and Republican parties support the proposal. It was approved by the House of Representatives in 1950. However, passage of the statehood bill by the Senate has been blocked by Senators with specialized political interests and by businesses with large investments in the Territory.[14]

The problems of statehood are the usual responsibilities of a

[11] National Park Service, *Recreational Resources of the Alaska Highway and Other Roads in Alaska*, U. S. Department of the Interior, Washington, D.C., 1944.

[12] The geographical awareness of a population appears to increase with greater distance from the more densely settled parts of the world. In Alaska the isolation is recognized by continuous use of the terms Inside, meaning someplace within the Territory, and Outside which usually refers to the United States.

[13] The judicial division (J.D.) is the smallest unit of governmental administration, excepting cities and reserves. Administratively a J.D. is similar to, but physically usually much larger than, a county in the United States. The smallest Territory-wide division of land is the Bureau of the Census enumeration district; however, the district boundaries have been changed each census, since the first in 1880, because of variations in the numbers of people in many areas.

[14] In the "lame duck" Congress of 1950 it was even difficult to get the Alaskan statehood bill officially before the Senate for consideration.

member of a democracy. Territorial governmental administration would, with statehood, probably need reorganization in part. However, the major problems would be the financial obligations assumed with more self-government. Roads, for example, are now the responsibility primarily of the Alaska Road Commission, an agency of and operating with funds from the Federal Department of the Interior. New road construction costs as much as $10,000 a mile now and maintenance is as high as $1,000 per mile per year. Roads are basic, yet it is clear that the responsibility of administering and improving the Alaska road system is expensive. There will be the problems, too, of instituting taxes; the Territory now has a school tax, taxes on fish and gold, and in a few localities a municipal land tax. However, to administer a general land tax, for example, will require data which some persons estimate will take a large crew of workers five years to collect.

Another basic problem of statehood is the geographic one facing the United States citizen. Should a non-contiguous area be admitted to the Union? If so, it might then be asked, where and on what bases may a line be drawn after the precedent is set? Furthermore, to what extent is the new United States weakened by the lack of physical solidarity brought about by the addition, governmentally, of isolated states? These are real challenges to the thinking of all of us.

There are potential advantages, as well, in statehood. Arrangements are already in operation whereby states receive Federal funds for certain purposes; in some cases, it is stated, the sums now appropriated for such work to Federal agencies in Alaska would be exceeded in grants to the proposed state. Too, it will be cheaper to administer some governmental functions from Juneau than from Washington, D.C. Finally, and perhaps of greatest importance, there is the psychological uplift with the gain of powers of self-government. Therein is a strength which may go far towards binding the people together and counteracting the lack of inherited traditions in the present population. We may rest assured that if statehood is approved for the Territory, Alaskans will accept it with confidence, vigor, and pride and will be real additions to the Congress.

IGNORANCE

Ignorance about the Territory, in general and specifically, is the most significant topic of all. And, unfortunately, ignorance per-

petuates itself. Regarding Alaska the forms of perpetuation are underselling, overselling, and over-generalization.

Many of us have been exposed to the negative approach to the Territory. Usually the theme is a carryover of the "Seward's ice-box" ridicule from 1867. It is, perhaps, easy to believe the idea of "you can't raise an umbrella on 160 acres of it" if thinking is in terms of some massive, glacier-filled mountains on the south, bleak

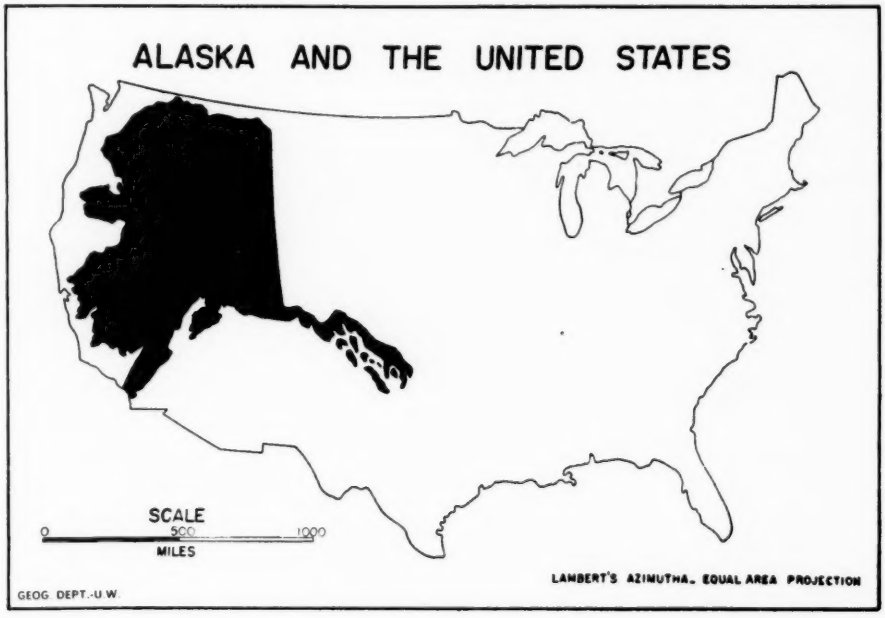

FIG. 2

tundra of the north, or marshy river deltas of the west. Objective analysis usually is not obtainable if Alaska is viewed in terms of conditions or activities in the United States—in such cases the negative attitude is the usual result.

Similarly alarming are the glowing comments of the "great land of opportunity" type. There are good possibilities for certain types of professionally trained people, for example, but not for untrained persons who expect to make a fortune practically overnight. The overly optimistic statements have their origins in the early 1900's. At that time scientists found that many of the general field crops grown in the Mid-West could be raised in parts of Alaska. It took overselling to change popular opinion about the

Territory at all but not all was changed and some exaggeration continues.

Probably the most vicious form of ignorance is over-generalization. A great deal is done via our texts and teachings. However, why must we generalize in three or four words about an area one-fifth that of the United States and with such variety (Fig. 2)? Elevations are from sea level to the highest in North America, there are at least three major types of climate, parts are glaciated and parts unglaciated, some is forested and some is desert, three types of native peoples and the whites compose the population, developed natural resources are of both the marine and land types, and agriculture in one place is primarily dairying while in another grain raising. Alaska might be called a land of contrasts. As such it is not the proper subject of the simple generalizations so often made. We have, in many cases, taken folk-lore for facts. Therein is the challenge to the teacher: to "soft-pedal" spectacular treatment of Alaskan history, beauty, or drabness and to make the country live in the minds of students as one of varying physical and cultural geography.[15]

Scientific data on Alaska are incomplete, also. Analyses are needed of the characteristics of climate, soils, vegetation, drainage, population, economics—in fact, of every item in the so-called geographical check list. As a subject for research we may say that Alaska is truly a land of opportunity. Too few scientists are specializing on the Territory and too many of these few are forced by military necessity to confine activities to immediate requirements. It is additionally discouraging to note the paucity of geographical specialization in such a fertile area.

The total potential of Alaska will be realized thru the combined

[15] In addition to the selected references noted previously, all of which may be obtained (often without cost) from the agency sponsoring publication or are in public libraries, many other technical and popular references are cited in the following Alaskan bibliographies:

Geological Survey, *Publications of the Geological Survey,* U. S. Department of the Interior, Washington, D.C., (current year),

Division of Bibliography, *Alaska, A Selected List of Recent References,* U. S. Library of Congress, Washington, D.C., 1943,

U. S. National Resources Planning Board, *Bibliography and Abstracts on the Subject of Agriculture in Alaska,* 1867-1942, Washington, D.C., 1943,

J. Wickersham, *A Bibliography of Alaskan Literature,* 1724-1924, Miscellaneous Publications of the Alaska Agricultural College and School of Mines (now the University of Alaska at College, Alaska), Cordova, Alaska, 1927, volume 1.

action of many persons. Unification of objectives in the scientific analyses of all Alaskan subjects—including the seven major topics noted herein—will result in the most rapid acquisition of objective data so badly needed. The coordination of Alaskan research was begun at the first Alaskan Science Conference.[16] Its continuation is assured and this fact is encouraging to Alaskan scientists. To them, also, it is equally significant that the data collected be used in the dissipation of ignorance about Alaska. This task is a challenge to research analysts, teachers, and citizens alike.

WHITHER ELEMENTARY SCHOOL GEOGRAPHY?*

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In a recent study, the available literature in elementary school geography for each of the years 1928, 1938 and 1948 was examined to test the hypothesis that there was a trend away from a major emphasis on "nationalistic" geography in the elementary schools of the United States to a greater emphasis on global or world geography, and to learn if geography in our schools has been adapted to supplement the modern discoveries of science in making this planet one world. The available literature in geography for each of the years 1928, 1938 and 1948 was examined in the attempt to secure the general concepts, content, methods, procedures and materials used in each of these decades. The evidence thus gathered for each of the years 1928, 1938 and 1948 was then compared and contrasted to learn what changes had occurred in elementary school geography from one decade to the next.

METHOD

1. There was the attempted establishment of a trend for the 20 year period under study from the proposals made by leaders in the field of geography. The writings of such authorities during the past twenty years were examined. Authorities first considered were

[16] Sponsored by the National Research Council and the National Academy of Sciences at Washington, D. C. in November, 1950.

* This article is based on a doctoral dissertation entitled "Trends in Elementary School Geography 1928-48," written under the supervision of Dr. Paul R. Hanna, Stanford University.

those whose names appeared in the executive list of the National Council of Geography Teachers for that particular year. Their writings, if any, were examined. Also considered were those who seemed to have written much in this field, if the number of writings were representative for that year.

2. Courses of study for elementary school geography were also studied. Thirty such courses, as representative as possible across the country, for each year 1928, 1938 and 1948, were examined and compared as to grade placement of objectives, content and methods, in an effort to learn what the changes were in such factors thru the two decades.

3. Some thirty geography textbooks for each of the years 1928, 1938 and 1948, representing as many of the elementary grades and as many of the publishing houses as possible, were evaluated as to objectives, content and methods. In many cases the teacher's handbooks and the workbooks that accompanied the textbooks were also examined, in an effort to discover the trend line that developed in textbooks thru these two decades.

4. Finally, a superimposition of these three trend lines, authorities, courses of study, and textbooks was made to learn if the following questions might be answered in relation to elementary school geography:

a. To what extent did these three trend lines agree or differ in objectives, content and methods?
b. What was the time lag, if any, between each of the three trend lines?
c. To what extent were the statements of the authorities incorporated into textbooks and courses of study?
d. To what extent did textbooks carry out the objectives, content and methods suggested by courses of study for that decade?
e. Were textbooks made for courses of study or was the reverse true?

General Conclusions Made from This Study

1. There was a trend found in: a. the statements of authorities, b. in geography textbooks for the elementary school, and c. in courses of study for the elementary school, towards a concept of global or one-world geography.

2. There was a span of almost twenty years between the state-

ment of authorities in geography and the incorporation of those statements into the objectives, content and method of elementary school courses of study in geography.

3. There was a span of almost ten years between the statements of authorities in geography and the incorporation of those statements into the objectives, content and method of elementary textbooks in geography.

4. It was found that authorities in geography were often the authors of or consultants in the writing of geography textbooks for the elementary school.

5. Courses of study in geography for the elementary school followed generally the pattern of textbooks in geography for the elementary school.

6. There was a trend towards treating geography as a separate subject, closely correlated with and serving as a basic study for the social studies.

7. Geography was receiving more attention as a subject, in the fusion with elementary social studies, in 1948 than in 1938.

8. There was a trend towards the greater importance of geography in the primary and senior grades, particularly the latter.

9. The findings of psychology have influenced the objectives, content and methods of elementary school geography.

10. There was a trend towards less emphasis on the number of geographic facts presented to the child and more on the interrelation of specific facts.

11. There was a trend towards an overall developmental program in geography from the pre-geography training of the primary grade child to the teaching of the one-world concept to the eighth grade pupil.

12. The trend was away from place geography with descriptive subject matter to a global geography which combined, related, compared and interpreted a mass of scattered facts bearing upon man and his home, the earth.

13. The acquiring of information from the study of geography has become of secondary importance to the acquiring of sympathetic attitudes and understandings of other peoples.

14. There has been a trend towards the closer relationship of objectives, content and method in elementary school geography.

15. There has developed a clear enunciation of objectives and understandings from elementary school geography to be presented and taught to the child.

16. There was a trend towards the greater use of current events, of the community and of active experience in the teaching of elementary school geography.

17. Conservation as a necessary part of a child's geographic training was the trend in the statements of authorities, courses of study and textbooks in elementary school geography.

CONCLUSION

It would seem that training in geography forms an integral part of our educational process thruout the elementary school. The study would indicate that only geography itself can train the student in geography and that to understand the complicated world in which he must live and let live, geography should be one of the disciplines in the education of every child.

THERE'S GEOGRAPHY IN A COUNTRY CHURCHYARD

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To many of us the experience of strolling thru a country churchyard is a familiar one. The peaceful quietude that prevails prompts us to turn our thoughts to years past, to read inscriptions on the various monuments or simpler slabs, and to visualize how these people lived during their sojourn on earth, their modes of living, customs, and the like.

To-day, many of our grade and high school boys and girls attend community or consolidated schools, usually centered in a village. Each of these small towns has one or more churches which often serve as community landmarks. Their churchyards or cemeteries offer much as an aid to the study of local geography, in determining the occupance stages which occurred within the community's development.

The anticipated study in local geography need not be intensive, for to become interesting it must not be beyond the "reach" of students of the upper grade or high school levels. Information can be obtained by consulting church or parish records, centennial publications, old newspapers, the particular state book of the *American Guide Series,* and possibly an abstract office to determine original ownership thru early land grants.

And for the study to become worth-while each student should participate in some manner. Several might consult records, others might make photographs of old land marks, while a few might obtain information from reliable, old-age residents. Others will prefer to write or record the findings brought in by these various groups.

However, before attempting this study the aim must be clearly understood and a definite objective sighted. The students should feel that the inscriptions found within the churchyard hold the key by which some information might be obtained regarding the past, and that they inquire for themselves as to how these people lived while on earth. Moreover, they should see that their task is to determine how these people kept pace with their times and what advance or improvements were made as years went by. In brief, the students may well determine both the number and sequence of occupance stages needed in making this study of their community's past.

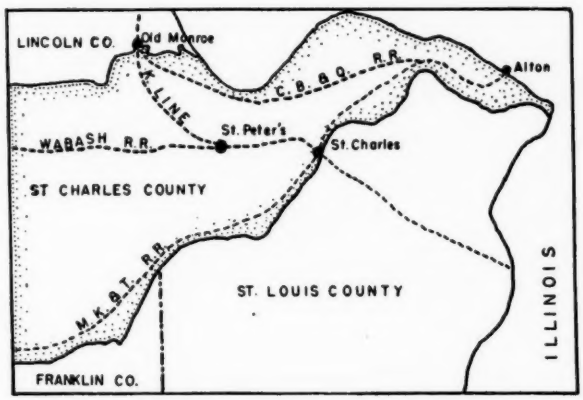

FIG. 1. Relative location of St. Peter's.

The following type-study is purely suggestive and might well serve as a guide to similar ones. It is designed to remain well within the "mental reach" of junior and senior high school students.

ST. PETER'S, MISSOURI: ITS SEQUENT OCCUPANCE

The Setting. St. Peter's, a village of slightly more than three hundred inhabitants, is situated in the central part of St. Charles County, Missouri, about eight miles west of St. Charles. And altho located on the Dardenne Creek, the Wabash Railroad and on both sides of U. S. Highway 40, its growth has never been spectacular as census records will show (Fig. 1). A population "plateau" was reached almost one hundred years ago and the number of residents fluctuated only slightly as the decades passed.

The Churchyard. Situated upon a loessial terrace about fifty

FIG. 2. The church is located on a terrace. The cemetery at the crest of this terrace is hidden by evergreens. In the foreground is U. S. Highway 40—the former Boone's Lick Trail.

feet above the elevation of the village proper is the All Saints' Church and cemetery (Fig. 2). The edifice with its lofty Gothic spire has become a scenic as well as an historical landmark, for the "steeple" can be seen for miles.

In the oldest section of the churchyard, grave markers are few —after a century of weathering and decay. But on those remaining a few names are discernible. Among those are found:

Eteinne Bernard, born December 1752—died September 1831
Louise Langevin, wife of Eteinne Bernard (dates obscure)
Hippolyte Bernard, born March 3, 1798—died May 1871
Louis Mouginot, died 1862 (age 64 years), native of France
Rachel Denny, August 10, 1783-December 18, 1859

Among other French names almost obliterated are: Deppa, Pepin, Langlois and Janetot.

In a nearby section of the churchyard, evidently set apart from the first mentioned, names of a group with a nationality different from the French are found. Among those listed are:

Madeline Spencer, 1815-1861
Paul Trendley, 1817-1849
Joseph Trendley (birth date obscure), 1861
Amelia Clark, 1822-1908

These people were Anglo-Americans who occupied the land at about the same time as did the French. Their habits and customs as well as land use differed tho, as we shall see.

In a third and later-used part of the cemetery another nationality is represented, for these people who displaced the earlier

FIG. 3. Here are some of the few remaining graves in the old French section.

French and Anglo-American settlers were German and Swiss-German immigrants. Names found in the oldest part of the German section are:

Anton Auchly, 1791-1866
Franz Schulte, 1804-1866
Augusta Schneider, 1805-1863
Mary Fetsch, 1818-1861
Ricks Kirchoff, 1829-1872

In addition to these earlier Germans the family names of Kuester, Schwendemenn, Wies, Stiefvater, Reineke, Iffrig, Ohmes,

Zeigemeier, Olendorff, Illi, Hoelter, Hartje, Wiechens, Zerr, Pfaff, Ell and others become common; for these Germans remained and their descendants comprise the present inhabitants of the St. Peter's community.

Of special mention are three isolated clusters of childrens' graves in the German section—namely, twelve in 1875, nine in 1877, and eleven in 1879. Epidemics of diphtheria accounted for this toll, for doctors were few, and in this case home remedies proved ineffective.[1]

So the churchyard offers a key to the past by clearly indicating three types of settler—namely the French, Anglo-American, and German. Furthermore, it clearly shows that only the German element survived; or that it Germanicized or assimilated the few minority members who remained (Fig. 3).

And now, what stages of occupance can we portray in this process of advancement and assimilation?

Occupance Stages. Four major occupance stages are:

1. The French and Anglo-American Hunter-Farmer Stage (1800-1840).

Parish centennial records state that descendants of a certain Toussaint Dardenne of Fort de Chartres (Illinois) established a camp or post along a creek now in St. Charles County, the Dardenne.

One of the first settlers on the Dardenne Creek was Jean Baptiste Blandeau, in 1796. He was followed by other French-Canadians and their families, namely: Jean Genereaux, Joseph Langlois, Jean Parquette, Joseph Boschaut, Louis Janetot and Eteinne Bernard. A few Anglo-American families joined them—those of John Lewis, Perry Brown, Lorenz and Warren Cottle, Paul and John Trendley, and Berthold and Henry Spencer.

Settlement was made on the low-lying left bank of the Dardenne Creek at the base of a loessial terrace with higher, well-drained uplands behind it. Timber predominated, but was interspersed with prairie grass. Wild game (yielding furs and food) was to be had in abundance. Furthermore, migrations of waterfowl in spring and autumn made this area a "hunter's paradise."

Altho the French obtained lands in the Dardenne Creek bottom they hardly developed them. Tools were few, equipment of all

[1] Personal interview, Catherine Schappe (Chapue).

kinds was scarce, and the Frenchman's will to farm was very weak. Farming, a poor supplement to hunting and trapping was carried on at times when ducks were not flying, squirrels were not cutting acorns, or fish were not biting.

The Anglo-Americans were more serious-minded. They farmed the more fertile, well-drained uplands upon and behind the terrace. These people lived on their farmsteads while their French neighbors lived in the village. And altho their tables were not so frequently graced with dishes of wild duck, squirrel, rabbit or fish, they produced a more reliable supply of food from garden, field, and barnyard.

Thru the combined efforts of both French and Anglo-Americans a log church (of St. Peter) and a grist mill were built by 1815. Corn and wheat were brought by farmers for grinding into meal and flour. And aside from neighborly bartering, each family was almost self-sufficient.

During this period roads were hardly more than trails. In fact, the Boone's Lick Trail (originally an animal and Indian path which was used by immigrants as they traveled westward) passed between the village of St. Peter's and the church situated upon the terrace. The Court of St. Charles County had the road surveyed, 1816-17, but it was difficult to follow and residents were asked to mark the side roads lest travelers be led astray.

And altho the procession westward along the pioneer trail was colorful, this movement had little effect upon the settlers of St. Peter's until the early 1830's. The French continued to live upon their undeveloped lands, sometimes casting wistful glances at the sturdy pioneers moving westward—for even these easy-going hunter-farmers began to yearn for more "elbow room."

2. The Immigrant German Pioneer-Farming Stage (1840-1860).

In the early 1830's certain immigrants seeking new homes in the Middle-West were attracted by the surroundings as they neared the village of St. Peter's along the Boone's Lick Trail. These newcomers were Germans—Schulte, Linhoff, Holtschneider and Hoelter by name. Certainly the little church of their religious faith had some attraction. But they also noted that at this spot the "hills met the broad bottom lands." Here a settler might have a farmstead upon the hill and farm an acreage in the bottom as well. So they decided to settle here.

Thruout the 1840's and 50's a greater number of other German settlers followed—mostly Hanoverians, and some from the German-speaking Swiss cantons. The names of Weinert, Kirchoff, Auchly, Weis, Arnold, Zeigemeier, Fetsch, Olendorff, Reineke, Schneider, Iffrig, Ohmes, Zerr, Wandeler, Illi, Ell, Hartje, Weichens, Heintzelmann and others were added to the parish roster.

These hardy Germans bought out the partly-developed lands of the French farmers, most of whom were eager to sell and move to new frontier areas. The few who did remain became Germanicized. Even the spelling and pronunciation of French family names assumed an unfamiliar air. Chapue became Schappe and Chanciellier became Suncelia. The Anglo-Americans who remained maintained their identity for a time, while others moved farther inland to the prairie lands of north and central Missouri.

The German settlers were careful, hard-working folk and farmed their small, newly-cleared fields with punctuality and precision. Gradually they cleared more land and prepared it for the plow. But since markets were not available there was no need to grow a surplus. Each family produced its own food and feed crops —wheat, corn, oats, potatoes, other vegetables, grapes and tobacco. Hives of bees furnished honey for sweetening foods, for sugar was scarce upon the frontier.

And with the new occupance and its improvement of the land their village (still called St. Peter's, altho the name of the church was changed to All Saints' when a stone church was completed in 1856) assumed the role of a small pioneer community trade center. Among the German immigrant passers-by were artisans as well—saddlers, harness makers, wagon makers, blacksmiths, millers and the like. A few of them remained to establish small shops in the village, serving the needs of their neighbor-farmers.

But the village merely satisfied the immediate wants of the people. Supplies for the retail stores were brought in at great expense over the Boone's Lick Trail. A better means of transportation was necessary before farmers could produce a surplus. Hence, the coming of the railroad was destined to give the settler a new role—that of a commercial farmer.

3. The Cash-Grain Railroad-Transportation Period (1860-1920).

The era of railroad building west of the Mississippi River be-

gan shortly after 1850. And the coming of the railroad was eagerly anticipated. The North Missouri Railroad (now the Wabash) was extended westward and reached St. Peter's about 1856. Thus the people had their first transportation line established and farmers began to ship surplus grain by rail.

And with the approach of the Hannibal and St. Louis Railroad (now the C. B. and Q.) southward into the Mississippi Floodplain, a branch line was extended from Old Monroe on the Hannibal and St. Louis to St. Peter's on the North Missouri, until the former line's high railroad bed could be completed thru the swampy northern part of St. Charles County. And altho the use of this branch line (the K Line) was only temporary, for a while St. Peter's became a railroad-junction town, for goods from both lines converged at this point.

The introduction of new farm machinery—sulky and gang plows, mowers, hay rakes, binders, threshers, and others combined to give this farming community a still more prosperous tone. Greater use was made of railroad facilities as decades passed. And altho other crops and livestock were produced, the major emphasis was placed upon the growing of wheat as a cash crop.

An 1890 survey of stores and other establishments within St. Peter's lists a shoemaker's shop, three general stores, four saloons, a mill, two blacksmith shops, a saddle and harness shop, a wagon shop, a tailor shop, a milliner shop, three hotels or boarding houses, a church, a parish school and a public school.[2]

But altho railroad facilities were good, other roads were poor. During times of heavy rainfall, and especially during the "spring thaw" they were often impassable. To shop or visit elsewhere, people had to travel by train and must arrange their business or visit according to train schedule. Lack of good roads tended to bind the people of the community more closely together. And with this community cooperation a blending of families thru intermarriage resulted. Almost everyone was related to everybody, and family ties were deeply ingrained—sometimes clannish.

4. The Diversified Farming and Hard-Road Marketing Period (1920-1950).

Railroad services obtained in the earlier period resulted in a dual pattern of agriculture—namely the growing of wheat as a

[2] Ibid.

cash crop as previously explained, and thru the gradual improvement of livestock, the production and sale of corn-fed hogs and beef cattle. Wheat remained the big crop however, and farmer buying and credits were arranged so that the individual could pay "after threshing."

Between 1900 and 1920 some progress was made in road improvement. A few of the county roads were widened and graded. Certain stretches were covered with gravel obtained from local creek beds. The Boone's Lick Road was graveled from St. Charles thru St. Peter's and westward. And tho roads in general were somewhat better than before travel must still be undertaken by wagon, buggy or surrey. So trips of any great distance were few and taken only on occasion of great importance.

Young St. Peter's residents sought employment elsewhere for the village had no factories. And since they traveled by train they "boarded away from home" returning only for Sunday visits, even tho the place of their employment was often less than ten miles away.

But the automobile of the middle and late "teens," made popular the demand for hard roads. Surveying for the first concrete highway in St. Charles County (U. S. 40), was begun in the St. Peter's neighborhood in 1923. Construction began a year later. And with the coming of this concrete highway people began to clamor for farm-to-market roads which became branch or feeder lines to U. S. 40.

To-day the St. Peter's community is well served by good roads. The family car and farmers' motor-truck are taken for granted. How has this change in the method of transportation affected St. Peter's?

The K Line that once gave the village an early, but brisk railroad-junction business is only a memory, for its tracks were removed in the early 1890's after a period of disuse. Its right-of-way has either reverted to brush and second growth timber, or has in some areas been obliterated by the plow or pasture. Local passenger service on the Wabash has greatly declined and only one small railroad-repair gang operates from St. Peter's. The farmers still use the railroad for long-haul freight service—shipping wheat, corn, baled hay or straw, and receiving commercial feeds, fertilizer, heavy farm machinery and the like.

Milliner, shoemaker, tailor, saddle, harness and blacksmith

shops are gone. People now go by family automobile to St. Charles (fifteen minutes distant) or to St. Louis (forty-five minutes away) for clothing, special foodstuffs and other supplies. The mill is gone and the old mill pond has been filled in. Instead, a modern farmers' elevator serves the purpose, dealing in grain, feeds and fertilizer. Hotels are no longer in operation, now superseded by cabin and trailer courts along Highway 40. A large implement and "repairs" store serves the needs of the progressive farmers. Only one general store remains, also two grocery-confectioneries, and three garage-filling stations.

Farm-to-market roads have resulted in the laying out of milk and cream routes and the farmers have cooperated in their establishment and success. So modern dairying is taking its place beside cash-grain farming.

New soil-building and cash crops—soy beans, lespedeza, sweet clover, and others are further reducing the wheat acreage—once the "king" cash-crop of the community.

Speed in travel and ease of contact have expanded the community horizon, and "new blood" is being infused thru intermarriage. The one-room schools are disappearing. And recently the village of St. Peter's entered into a large consolidated school plan including the neighboring villages of O'Fallon, St. Paul, Josephville, and Flint Hill—which at an earlier date were held in sharp rivalry, if for no other reason, thru Sunday baseball!

CONCLUSION

In the churchyard, now fenced and well tended, space remains for only a few additional rows of graves. Wooden crosses of the older part have almost disappeared. The marble slabs of the middle portion are weather-streaked and discolored. The granite stones in the newer section, long-lasting and fade-resistant bear evidence of better quarrying and dressing methods, and a transportation system of a truly modern age. Here, a few new names occur; but the old-established German families remain predominant!

GEOGRAPHY AMONG THE SCIENCES*

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Geography is an ancient subject and for many centuries primarily consisted of a compilation of facts including place locations, earth features, the passing weather, climatic types and regions, construction of maps, the earth's resources and industries, the races of mankind, and the distribution of population. Toward the end of last century, geographers began to include with the subject an interpretation of the landscape as a home for man and to consider the mutual interrelationship between the environment and human activities. About 1904 William Morris Davis taught that geography is a study of the relationships between the earth and the life on the earth. Soon thereafter Harlan H. Barrows of the University of Chicago defined geography as human ecology, and Brunhes, de la Blache, and others have emphasized how man has brought about changes in the use of land and the appearance of the landscape.

Geography is a very broad subject and includes the human applications of many sciences and cultural areas. Today, many geographers consider that the most unique and important contribution of geography is that of tying together various sciences and other subjects—the unifying principle being that of their human relationships. An excellent example of this is the relationship between time and place as illustrated by history and geography.

REGIONAL, ECONOMIC AND CONSERVATION GEOGRAPHY

Specific divisions of geography selected from the numerous courses offered by colleges and universities include economic, physical, regional, human and political geography.

Some geographers consider that the primary contribution of the subject to knowledge is that of accurate descriptions of regions. The delineation into regions is based on varied criteria. Some geographers use climate as the basis for regions, others separate the earth's surface into physiographic regions, still others prefer to describe economic or human use regions. In regional geography the factors of environment such as location, climate, relief features,

*This paper was presented at the joint session of the National Council of Geography Teachers and the North Central Association of Science and Mathematics Teachers, Chicago, November, 1950.

natural vegetation, soils, minerals, water resources, etc., are considered, followed by descriptions of agriculture, mining, manufacturing and other industries of man together with the distribution of population, location and functions of cities, and problems of importance to various nations. Regional geography provides superior means of helping students learn about the races and countries of the world and the factors that influence the occupations and culture of people and the international relationships of countries. Political and military geography are founded on a firm foundation of regional geography.

Economic or commercial geography is widely taught in higher institutions of learning and may be the only geography course offered in a college or university. When the only course given, economic geography, is usually included in a school or department of commerce or economics. Economic geography has a high cultural value in making students conscious of the location and concentration of industries and the varied ways man has of making a living. It will be of use to students all their lives in helping them to understand mankind and his ways, besides having the practical purpose for future business men of learning the facts concerning sources of materials, their utilization and the factors affecting production, processing and marketing of goods.

A course in the conservation of natural resources is of great practical and social value to the future leaders of opinion in our country. There is need of conservation measures which will help insure the maintenance of acceptable living standards for Americans. In general conservation is cooperation between man and nature that will bring about the most efficient use of the world's resources. The ideal of conservation is to have a proper balance or adjustment between man's utilization of resources and the environment so that the resources will be used without waste. Certain states now require conservation to be taught in the public schools and demand for trained teachers and accurate information about conservation is increasing. Knowledge concerning location of resources and their conservation is of paramount importance to the preparedness program. Proper use of our resources is essential if America is to retain its power.

If space permitted, other offerings in geography could be analysed and their purposes stated, but perhaps a better way of showing the position of geography among the sciences will be to discuss the interrelationships between specific sciences and geography.

Geography and the Military

The briefing given pilots in preparation for air raids is essentially geographic. They learn about the weather to be experienced, the earth features which help to identify the chosen points of attack, the location of strategic industries, and the key bottlenecks in transportation. Ground troops in the invasion of North Africa were carefully briefed regarding the culture and customs of the Moslems so that they could avoid giving offense to the local residents and similar briefings are given the men in other areas requiring the use of military force in order to minimize the irritation aroused by the impact of outsiders upon the local inhabitants.

During the Second World War the V-12 training program included geography. Usually the subjects taught were: elements of geography, economic geography and political geography. This shows the importance attached to geography by the Military. Where taught by qualified persons, good results were obtained. Unfortunately, at some institutions any faculty members available were assigned to teach geography; these often had no training in geography and scant knowledge of the subject and if the results were poor that is what might be expected from such instruction. For the best results in geography, competent and thoroly trained teachers are essential.

Aviation

Aviation, whether commercial or military, constantly uses geographic knowledge. The navigator needs to know how to determine latitudes and longitude and to plot his course under varied conditions. The pilot must know where to fly in and around the broad cells of high and low pressure so as to secure the advantageous tail winds and avoid head winds and stormy regions. He must know the conditions producing dangerous icing, sleet and fog, and the altitude for flying which would be safest under these conditions. The height at which the plane flies is in part determined by the mountain peaks and ridges lying across the plane's course. Knowledge of the tremendous up blasts and down blasts in thunderstorms helps enable the pilot to bring his craft safely thru these powerful local storms. In recent years our knowledge concerning hurricanes and the accuracy of forecasts about these terrific storms has been increased by the use of powerful planes which fly over and into the hurricanes in the interest of science and safety of others.

THE WEATHER FACTOR

Geography has long included the study of weather and climate, and has contributed largely to the ramifications into the many fields which application of atmospheric studies have led. In the Pacific Northwest forest fire hazard warnings are issued when the relative humidity drops below 20 per cent, the forests under these conditions being highly combustible. Experiments are being conducted with radar during the thunderstorm season in hopes that the accuracy of forecasts can be improved. Incidentally, lightning is a principal cause for forest fires in the Pacific Northwest. For example a series of dry thunderstorms once started several hundred fires in 24 hours in the Kiniksu National Forest of northeastern Washington and northern Idaho.

The relationship between agriculture and climate is extremely important. Among the factors involved are: amount, time of occurrence and character of the rainfall; growing season available between killing frosts in spring and fall; the number of heat units in the growing season above 40°F. which is the minimum temperature for plant functions to operate; the sunshine and cloudiness, windiness, relative humidity and other factors affecting the rate of evaporation; and the prevalence of hail and other destructive storms. Entire books have been written devoted to agricultural meteorology. At present much attention is being paid to the seeding of clouds with carbon dioxide and potassium iodide to produce local rain, which may be of importance to power companies and municipal supply as well as to farmers.

Climate affects other industries besides agriculture. For example, a better grade of cotton cloth is manufactured in an atmosphere of high relative humidity than when the relative humidity is low. Western England being more humid than eastern England early became the leader in cotton manufacture, in part because of this factor. Today, the air in many cotton mills is artificially humidified.

Sometimes industrial regions have distressing conditions brought about by the mixing of fog, smoke and fume which develop under conditions of a stagnant high pressure in the winter. People suffering from throat troubles have their condition aggravated and a few deaths sometimes occur. Local areas in Belgium, Pennsylvania and near Los Angeles are among those which have experienced the conditions, remedies for which are not always easy.

Engineering

There are geographic needs for almost every science. It is desirable for an engineer to know the sources of his materials in addition to their uses and strength. Economic geography can supply such information. Several schools of mines require a course in World Geography or Latin America so that their graduates may have some knowledge of conditions in the foreign lands where many will be employed. Incidentally courses in sociology which emphasize labor problems may be of great help to engineers in dealing with their employees and in public relations generally. Science should improve the bases of living and of mutual understanding between the management, labor and the public. Society benefits when science contributes to improvement of living standards and social relationships.

Chemistry

Chemists and chemical engineers need to know the facts concerning the occurrence of essential raw materials, available transportation, labor supply, power resources and markets in order to determine where processing and fabricating plants may be located. Other geographic factors affecting plant locations may include: water supply for steel mills and textile dyeing; the availability of railroad or other transportation for flour mills, furniture factories and most other sorts of bulky goods; and the occurrence of needed supplies adjacent to each other. For example, at Texas City where oyster shells, oil for power and a site by the ocean side were determining factors in locating a plant to recover magnesium from sea water. The juxtaposition of iron ore, coking coal and limestone for flux or a convenient meeting place for them has determined the location of numerous blast furnaces and steel mills, for example at Birmingham, Alabama, and Gary, Indiana. A combination of available pure quartz sand and supplies of natural gas has contributed to the location of glass works in Indiana and Oklahoma. In contrast to most industries which are located close to centers of population that are convenient for labor and markets, atomic energy plants may be located in large open spaces remote from everything except cheap hydroelectricity, as at Richland, Washington.

Biology and Forestry

Biologists, who specialize in ecology, are applying geography to their science. Men concerned with the conservation of wild life

and fish need to know the optimum habitats for the animals, otherwise introduction of new birds or fish species may fail for lack of the necessary environment. The effects of animals on a new environment must also be known and an understanding of this would have prevented the introduction of rabbits into Australia, carp into lakes of eastern Washington, cats and goats into small oceanic islands and the like. The biologist and agriculturist needs to know the climatic regions of the world and the weather requirements affecting plants and animals in order to know the most efficient use that can be made of any area and the crops and livestock best suited to a certain environment.

Foresters use geography in many ways. The species of trees and the rapidity of their growth is related to the temperature, rainfall, growing season, soil, steepness of slope, etc. The distribution of forest types is therefore a phase of geography. Foresters need to investigate the geographic conditions favorable for the germination of seeds, the rapid growth of trees, and the species best adapted to diverse environments. Among the first regional geographies for college use in the United States was *Forest Physiography* by the late Isaiah Bowman.

PHYSICS AND OCEANOGRAPHY

Physicists find many of their experiments are affected by variations such as relative humidity and temperature, by changes of pressure resulting from cyclones and to differences in elevation, and by differences in the clarity of the atmosphere, all of which are concerned with the earth and hence are essentially geographic phenomena. The astronomer in particular needs to know the regions most free of clouds and dust so that he can locate his instruments in those places where they can be used most efficiently.

Oceanography, like meteorology, is a science which has grown from geographic soil. It is concerned with the hydrosphere, a very mobile part of the earth. The tides, currents, temperature, constituents, configuration of the coasts and ocean floor and the life of the ocean and its distribution are outgrowths and elaborations of simple geography.

GEOGRAPHY AND DISEASE

Certain diseases appear to be related to different geographic factors. High temperatures, especially when long continued and associated with high relative humidity, are injurious to many people

and may permit infections which the body could ordinarily throw off. The incidence of mosquito, tick and other insect borne diseases is related to the weather and vegetative conditions under which the insects thrive. Fungus infections are very prevalent in the wet tropics. Internal parasites spread most easily in densely populated and hot, wet lands, where the people go bare-footed and pay small attention to sanitation. Here human and natural factors are interrelated. In the treatment of lung diseases and sinus infections physicians often recommend a change of climate to the victim whose chance of recovery is improved in the new environment. Numerous diseases of malnutrition in human beings, animals and plants have been traced to a lack of small quantities of minerals in the soil, among these are boron, copper, cobalt, and manganese. Sometimes soils lack these naturally, in other cases the soils have been depleted by erosion and cropping.

Mathematics

Mathematics is an integral part of geography. The construction of map projections, the explanation for the deflection of the winds and ocean currents by the earth's rotation, the calculation of latitude and longitude, and the determination of the length of day and numerous other geographic laws and principles require the use of mathematics, which may well be called the mother of all science. When new sciences attain maturity the treatment of the subjects tends to become more mathematical. The construction of graphs and isometric maps of distribution and production as well as the interpretation of statistical data, all stem from mathematics.

Planning

Among the recently developed sciences is that of public planning, which may be on a city, county, state, regional, or national basis. The foundation upon which planners build consists of resources, physical features, and general environmental conditions. All of these are fundamentally geographic. Geography provides the base from which planning can proceed. Nearly all planning commissions have geographers among their staffs. Courses in urban geography and geographic planning are given by departments of geography in numerous colleges and universities.

Private corporations seeking new plant locations analyse geographic data about possible sites as an aid in reaching a decision.

Important factors considered include markets, labor, estimated costs of operation, raw materials, and transportation.

NATIONAL POWER

A nation's power is in proportion to the resources available and the effectiveness of their utilization. Few nations were as fortunate as the United States in the original abundance of natural resources of fertile soils, minerals, forests, fish and game, and supplies of water for power, irrigation, industrial and domestic use. But no country since the dawn of history has exploited its resources at such a rapid rate as has our country. Soil erosion, floods, deforestation, great decline in abundance of wildlife, and local exhaustion of mineral supplies, point the need of learning and applying conservation measures which will help prevent declines in our living standards and in national power. Research in all the sciences can help furnish the information needed about our resources, their most efficient utilization and desirable measures for their conservation. Substitution of the abundant for the less abundant, prevention of waste and recovery of scrap, introduction of new crops and systems of farming and learning how unused resources can be best utilized, are among the aims which cooperation among scientists can help solve.

From the standpoint of national defense geography can assist with facts about the location and production of strategic resources, of the terrain, coasts, cities, industries and climates of possible invasion areas, and in the preparation of maps for use by the air, land and sea branches of the Military. Accurate information is required too to help in fixing the most suitable boundaries of nations.

CONTRIBUTIONS OF GEOGRAPHY

Advances are constantly being made in science. In the future food manufactured from algae may be harvested from the sea, new fisheries may be discovered at great depths far beyond those exploited at present, fuels may be manufactured from plant waste, and atomic and solar energy may replace exhaustible fuels. One thing is certain. Science is not static; rather, scientific knowledge is steadily increasing. The problem of man today is to so use science knowledge that civilization and human happiness are improved. Like other sciences, geography is a dynamic subject. Textbooks in geography are out-of-date in some particulars almost as

soon as published. To the geographer, one of the great joys in teaching and writing about the subject is that geography, along with other sciences, is constantly changing and one must be alert to keep up with the latest developments.

Every branch of science is intended to cover a certain field of knowledge and to have certain primary purposes in education. Yet no science can be completely restricted to a pigeonhole. Sciences tend to overflow from one compartment into another and fuse together. Examples of this are physical chemistry, biological chemistry, and physical geography. Even commercial geography, when properly presented, includes much economics along with factual geography. There is need of some subject in which widely scattered and diverse scientific facts, especially those which have direct human applications, can be coordinated. Geography lends itself to this purpose, and it seems reasonable that if a course which stresses coordinated relationships did not already exist it would have to be invented. In conclusion the author believes that geography as a science is concerned with studies of principles, regions, distribution and other facts, but also that emphasis should be placed on the concept of human relationships.

SOME ASPECTS OF COLLEGE GEOGRAPHY PRE-TESTS

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DEFINITION

At least three types of tests are in common use among educators today, achievement tests, diagnostic tests and prognostic tests. Achievement examinations are designed to discover what a student has actually learned by way of facts, principles, concepts, generalizations, skills and understandings. Diagnostic tests are given primarily to uncover attitudes, misconceptions and areas of weakness in pupils' specific and general knowledge. Finally, prognostic tests attempt to predict future success in a given field, course or topic.

Altho there is a close relationship between many aspects of pre-tests for a particular course and those for a given field or topic there are enough differences so that only references to full college

courses will be included in this discussion. Also, since there may be some differences between pre-tests at the graduate level and the undergraduate level, this discussion will be concerned only with the undergraduate level. Therefore, the term *pre-test* as used here will designate an achievement-diagnostic-prognostic test given to undergraduate students just prior to the beginning of study of a particular geography course and administered by the instructor or professor.

USE

Most college or university geography departments offer undergraduate courses usually categorized as general or survey, regional and systematic courses. When considering the reasons for using pre-tests, it is understood that some are more appropriate for some types of courses on specific occasions than others. Probably any complete list of the uses for geography pre-tests would contain most of the following:

1. To stimulate the interest of the students. Motivation is always a problem in any teaching-learning situation. A quick review of some of the materials to be studied, by use of a pre-test, is undoubtedly one of the easier and perhaps more efficient methods of both gaining the students' attention and stimulating their natural curiosity. Students are generally quite surprised and happy to find they already know something about the materials to be studied.

2. To aid in the evaluation of the instruction. The outcome of this particular use depends a good deal upon the type of achievement tests administered later in the course. If, for example, the final test in the course contains essentially the same items as the pre-test, in a different form of course, then obviously it will be possible to discover something about the amount of learning which has taken place. On the other hand, if a much more difficult test or series of tests is given later, then probably this outcome will not assume any great importance. A pre-test must not be used in any way to determine course grades or most of its better uses will soon become invalid. This point must be adequately stressed before the pre-test is administered.

3. To discover the students who have the best and the poorest background. Today, students come to college with an exceedingly wide variety of experiential background. Some students have not taken a course in geography since elementary school or junior

high school. Many have never been more than a few miles from their birthplace, while others have traveled widely in foreign lands and many thousands of miles from their residences. No instructor can be expected to know about all the experiences of every student. A pre-test, carefully and thoughtfully prepared, can be an aid in determining each student's relative achievement within limits in such things as facts, principles, concepts, generalizations, skills, understandings and attitudes. The information thus gained can then be utilized for a number of corollary uses:

a. to plan the time to be spent on each topic according to the weaknesses and strengths of the class as a whole
b. to single out the best students for stimulating assignments
c. to locate the poorest students for possible counseling and remedial work
d. to compare the general quality of students from one quarter or semester to the next.

4. To show students their weaknesses and strengths. College students seldom enter a course without having some knowledge about the material to be considered. However, usually they have no idea of the extent of their knowledge or of their relative knowledge in comparison with the rest of the class. This can be especially important where the classes are large and some modification of the normal "curve" is used in the grading system. Those who score very poorly may be made to realize they will have to study more diligently if they are to improve their relative position.

5. To predict the success of individual students. This use indicates something of the prognostic value of pre-tests in college geography. In administering pre-tests to more than 750 students in survey, regional and systematic courses and then comparing the results with later achievement tests this writer has found correlation coefficients which range from .50 to .75. These correlations are not, of course, high enough to allow an instructor to predict each student's final grade. But, it has been interesting to note that those students scoring in the upper or lower 10 per cent of the class on the pre-test seldom differed greatly in ability when the results of course work achievement tests were obtained. The implication is clear: the students with the best background were the best achievers, while the students with the poorest background were the poorest achievers. Here, then, is another argument for giving special work and consideration to the better

students. Another result which accrues from this use has to do with consciously aiding the instructor to become familiar with many members of the class thru study of their pre-test scores.

6. To give students an idea of the kind of tests the instructor favors. Exercising the prerogative to which every college instructor is fully entitled, each geography professor constructs the type of test he thinks best. Indeed, he has little choice, since there is not one modern standardized college test or pre-test in geography in print in the United States. At any rate with literally scores of kinds of tests and test ideas in every college not only in geography but in other fields many students work themselves into a nervous condition because they do not know what type of test to expect. A pre-test which employs the type and kind of test items the instructor will use later in determining grades would help to alleviate this condition to some extent.

7. To provide a definite learning experience. Complete use of a pre-test requires that the instructor spend some little time explaining the answers to each and every question on the pre-test. This will probably be done immediately after the pre-test is administered but there are undoubtedly one or two good reasons why it might be postponed until a later date. An instructor who handles this answering session with imagination can make some positive contributions to the learning of his students.

PREPARATION AND ADMINISTRATION

Generally speaking college instructors prefer to give either so-called essay-type questions or objective-type questions. The myriad kinds of essay and objective-type questions or combinations on the same kind of test are almost infinite. However, a simple rule of thumb would probably be to give a pre-test which is similar in construction to the achievement or diagnostic tests the instructor expects to administer later. In any case the instructor surely ought to prepare pre-tests by reference to some positive course objectives just as he prepares any good achievement, diagnostic or prognostic test.

Essay-type tests whether they are designed to be pre-tests or achievement tests have self-imposed limitations. Nevertheless, they are probably as reliable and valid as pre-tests as they are when they are used any other way. This writer believes they may have some value as pre-tests for specific topics but are definitely mis-

leading and practically worthless as pre-tests for entire courses. Since we are concerned with entire courses here it seems imperative to confine the discussion to objective-type questions.

Many kinds of objective-type tests have been used over the years. As a general rule a pre-test ought not to contain too many kinds of objective-type questions, probably no more than four at most. Numerous studies, mostly in other fields and with the usual type of achievement, diagnostic or prognostic tests, have indicated multiple-choice items to be the best in most instances. In geography matching questions and map questions seem necessary also. In addition, if the instructor desires to study misconceptions which students hold, the true-false question seems to have positive merits.

Regardless of the kind of test items employed it stands to reason that some of the items ought to be quite simple. On the other hand, many items should be quite searching and probably not even vaguely recognizable to the students poorest in experience. To obtain valid results by encouraging the students not to do too much guessing it would appear best to ask a slightly higher proportion of relatively simple questions than difficult questions.

It seems quite unnecessary to do more than mention here the need for adequate coverage of every topic contemplated for inclusion in the course. Quite obviously the number of questions per topic will be based in most cases on the comparative time the instructor estimates he will require per topic.

The method of administering a pre-test ought not to differ decidedly from that used for any other test. The same cautions and general instructions to students will probably suffice. If a time limit is imposed the instructor must expect the same change in the degree of validity he would expect from any other test. There do not appear to be any valid reasons why a pre-test in a given course should be postponed beyond the second or third class meeting.

Conclusions

Even tho the quality of college students is and should be higher than those found in elementary, junior high or high schools, it is necessary to remember the difference is only one of degree. All persons learn by many of the same general methods. College students, being primarily in the higher intelligence groups, learn faster and are generally more mature and experienced than pupils usually found in the lower schools. The fact that they learn rapidly

does not mean that they do not appreciate and need help from their professors . . . they do! Pre-tests can aid students in a number of ways just as they will aid professors who will take the trouble to prepare and use them.

To anyone who has attempted to find past work on this subject either in the field of geography or many other fields of knowledge one thing is immediately evident: much work needs to be done with pre-test construction, use and validation.

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IN APPRECIATION OF GEORGE J. MILLER*

Dr. Miller, at this 36th annual meeting of the National Council of Geography Teachers, we are delighted to honor you. You saw that the establishment of the Council would be a great aid to geographic education. You served as its secretary for many years, until it was well-established.

In 1920 you undertook the difficult task of editing the JOURNAL OF GEOGRAPHY, which thereby became the Council's organ. The Council's financial inability to support a worthy journal did not deter you. For 30 years, as its editor, you devoted thousands of hours unselfishly and without pay.

Upon your retirement as editor, many people want to express appreciation for what you have done for geography, the Council, and for individuals. President Durand appointed a committee to obtain a tangible token of the Council's appreciation of your services. Response from inquiries indicated that many people were aware of your long service.

Here, Mr. Miller, is a substantial check for you to use as you wish. This money represents gifts from more than 80 individuals and Council members.

A contribution worthy of specific mention is one from the A. J. Nystrom and Company, for 30 years the publisher of the JOURNAL. That the company, without solicitation, makes a substantial gift to honor you is eloquent testimony of your sterling character and fine cooperation.

Altho there is not time now to read the full statements made by the 80 people who have sent me expressions of appreciation, here are two:

Dr. Richard E. Dodge, for years an editor of the JOURNAL and of the Annals of the A.A.G. writes that he "has long doffed his hat to you for your many years of successful promotion of geography and geography education, and for the establishment of the N.C.G.T., an achievement of inestimable value."

Cora B. Sletten, who for 23 years was assistant editor of the JOURNAL, writes "unswerving devotion to the promotion of geography in education, including the putting into the hands of teachers and administrators as well as libraries and classrooms a magazine and supplementary materials that would be useful

*Summary of the remarks made by the chairman of the N.C.G.T. Appreciation Committee at the Banquet, Edgewater Beach Hotel, Chicago, November 24, 1950.

in this task. Every manuscript you read was considered in the light of 'what use will this article be if we publish it?' "

You are honored not only as an excellent editor and a highly helpful worker in the Council but as a man who has exemplified one of the greatest American ideals, constructive service rendered unselfishly and cheerfully, with faith in the worthwhileness of all earnest efforts.

GEOGRAPHICAL PUBLICATIONS

L. Dudley Stamp. **The World: A General Geography.** Twelfth Edition. 669 pp. Longmans, Green and Co., Inc., New York. 1950. $2.25.

Publication of the revision of *The World* June 28, 1950 brings to the geography profession a useful study of regional geography in a more up to date form.

In his note to the 12th edition, Dr. Stamp states that the book has "been thoroughly revised—much of it rewritten—and the opportunity has been taken of renewing and, where necessary, revising the maps and diagrams and of remaking the half-tone blocks. It has been necessary to reset the whole book, but, to avoid confusion the order has been retained."

While several alterations have no doubt been made, the reviewer notes but little change in the many attractive maps and sketches of important world physical features already appearing in old editions of *The World*. Minor changes have been made in descriptive material to provide greater conformity to present world conditions. Questions and exercises appear after each of the twelve sections, and an appendix, made up of "Examination Papers and General Questions Mainly Taken from Public Examinations of School Certificate or Matriculation Standard," precedes the index.

No doubt the book is of greatest value to American geography students as a reference, but it may serve as a valuable text book to British readers. After devoting 168 pages to General Physical and World Geography with sections on Mathematical Geography, The Atmosphere, The Hydrosphere, The Lithosphere, The Major Geographical Regions, and Man on Earth, the author gives 217 pages to a discussion of European regions, 100 pages to regions of Asia, 36 pages to Australia and New Zealand, 41 pages to Africa, and only 80 pages to the Western Hemisphere—54 of these to North America and but 26 to South America. Some geographers may wish that more space were given to the Western World.

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THE NATIONAL COUNCIL AT WORK

NATIONAL COUNCIL MEETING

The 1951 meeting of the National Council of Geography Teachers will be held in the William Penn Hotel in Pittsburgh on November 22 and 23. The meeting is sponsored by the Department of Geography, University of Pittsburgh in collaboration with the Geography Club of Western Pennsylvania. Dr. Frances Hanson and Dr. Warren J. Nystrom are in charge of local arrangements.

The program for the meeting will feature the theme "Geographic Understandings in a Time of Crisis." The program for the several sessions will carry out various phases of this general theme. Professor George J. Miller, Indiana University and long-time editor of the JOURNAL OF GEOGRAPHY will be the banquet speaker. Other prominent geographers will appear on the program. The tentative program is now nearing completion.

EXECUTIVE BOARD MEETING

The Executive Board of the National Council of Geography Teachers met at the Palmer House on Monday, March 19, to transact such business as had accumulated since the meeting at the Edgewater Beach Hotel in November. At the meeting the tentative program was submitted and plans were made for its implementation.

STATE CO-ORDINATORS

Several changes in State Co-ordinators have been made since the list was published last spring. Elections or appointments will be completed, it is hoped, by early May in the following states: Alabama, Arkansas, Delaware, Illinois, Kentucky, Maine, Michigan, New Hampshire, and North Carolina.

ARIZONA: Dr. Paul Miller, Arizona State College, Tempe
CALIFORNIA: Dr. V. Calvon McKim, Fresno State College, Fresno
COLORADO: Dr. Lee R. West, Colorado State College of Education, Greeley
CONNECTICUT: Dr. George R. Rumney, University of Connecticut, Storrs
DISTRICT OF COLUMBIA: Dr. Ovid M. McMillion, Wilson Teachers College
FLORIDA: Mrs. Annice Davis Elkins, Box 350, Kissimmee
GEORGIA: Dr. J. F. Hart, University of Georgia, Athens
IDAHO: Mr. Kenneth J. Williams, Boise Junior College, Boise
INDIANA: Dr. G. David Koch, State Teachers College, Terre Haute
IOWA: Mr. Lee O. Yoder, Drake University, Des Moines
KANSAS: Miss Anne M. Goebel, Kansas State Teachers College, Emporia
LOUISIANA: Miss Bonnie Mae Smith, City Schools, Lake Charles
MARYLAND: Miss Helen Mixter, 3 East 25th, Baltimore 18
MASSACHUSETTS: Miss Ada M. Shawkey, State Teachers College, Framingham
MINNESOTA: Dr. Lyda Belthuis, University of Minnesota, Duluth Branch
MISSISSIPPI: Dr. E. E. Hall, Mississippi Southern College, Hattiesburg
MISSOURI: Dr. Sidney Ekblaw, University of Kansas City, Kansas City
MONTANA: Dr. Nicholas Helbrun, Route 3, Bozeman
NEBRASKA: Dr. Esther Anderson, University of Nebraska, Lincoln
NEW JERSEY: Dr. Adelbert K. Botts, State Teachers College, Trenton
NEW MEXICO: Mr. James Bowen, East New Mexico College, Portales
NEW YORK: Dr. Katheryne T. Whittemore, N.Y. State College for Teachers, Buffalo
NORTH DAKOTA: Miss Ina C. Robertson, State Teachers College, Valley City
OHIO: Dr. James R. Beck, Kent State University, Kent
OKLAHOMA: Dr. George Corfield, Oklahoma A & M College, Stillwater
OREGON: Miss Hazel R. Newhouse, 1429 S.W. 14, Portland 1

PENNSYLVANIA: Dr. Frances M. Hanson, University of Pittsburgh, Pittsburgh
RHODE ISLAND: Miss Marion I. Wright, Rhode Island College of Education, Providence
SOUTH CAROLINA: Dr. Julian Pevy, University of South Carolina, Columbia
SOUTH DAKOTA: Miss Charlotte M. Noteboom, University of South Dakota, Vermillion
TENNESSEE: Miss Marie Harrison, East Tennessee State College, Johnson City
TEXAS: Dr. E. M. Scott, Sam Houston State Teachers College, Huntsville
UTAH: Mr. S. Elliott Budge, Jr., High School, Salt Lake City
VERMONT: Dr. J. Rowland Illick, Middlebury College, Middlebury
VIRGINIA: Dr. Sidmon P. Poole, University of Virginia, Charlottesville
WASHINGTON: Dr. Robert Funderburk, Central Washington College of Education, Ellensburg
WEST VIRGINIA: Mr. Robert L. Britton, Marshall College, Huntington
WISCONSIN: Miss Margaret S. Chew, State Teachers College, LaCrosse
WYOMING: Miss Ruth Linder, University of Wyoming, Laramie

GEOGRAPHY AND ALLIED MEETINGS

Two meetings should claim the attention of geographers: 1. Geographical Association of Great Britain, Sheffield, England, July 31-August 7; and 2. World Organization of the Teaching Profession, Velleta Malta, July 20-26. Thus far no one has been located who will be available to attend the meetings at Sheffield or at Malta. If any members of the National Council will be in the vicinity of these places at the dates indicated above, they are asked to contact the President of the National Council so that they may be appointed as official delegates to these meetings.

DISTINGUISHED SERVICE AWARD

If you wish to nominate a person for the Distinguished Service Award, please send your nomination with a supporting statement to Dr. H. O. Lathrop, Chairman of the Distinguished Service Award Committee.

H. O. LATHROP
President

GEOGRAPHICAL PUBLICATIONS

William and Dorothy Irwin. **Australia and New Zealand.** 312 pp. The Macmillan Co., New York, 1950. $1.80. Illustrated. Appendix and Glossary.

Mary Russell. **Great Britain and Canada.** 312 pp. The Macmillan Co., New York, 1950. $1.80. Illustrated. Glossary.

These two books belong to a series of geography readers entitled: *Around The World.* They are designed to supplement textbook materials on the areas suggested by their titles. They provide elementary students with interesting and intimate knowledge of people and of the lands in which they dwell, information not usually found in the geography textbook. They enrich the curriculum in geography, social studies and general reading.

The authors of each book in the series are well qualified to write on the particular part of the world, having lived and studied in the country about which they write. In preparation in the series are books on: *Islands of Western Pacific; The Near East; Southeast Asia;* and, *Alaska and Hawaii.* Just released, is the last mentioned book.

Alaska and Hawaii and the other books will be available in 1951. The books are written for pupils of the 4-6 grade level.

In the book *Australia and New Zealand,* approximately two-thirds of the material is devoted to Australia and one-third to New Zealand. The book is written in an easily readable descriptive style; only in a few instances do the authors resort to a journey method with a conversational style. The sentences are well balanced, not too short as to give a staccato effect, nor too long to be too involved for youthful readers. The vocabulary is carefully controlled and where new words of geographic significance are introduced they are given in italics and in the next sentence they are simply and carefully explained.

The authors have been most skillful in combining both geography and history. Historical events are given excellent geographical interpretation. Man's use of the various geographical regions is well done.

The reviewer was interested especially in the titles and sub-titles of the various chapters. They are simple statements, but have been carefully selected to catch the interest of the reader. Titles of chapters and the notations under the pictures are given in bold black type. The size of the type selected makes for easy reading.

At the close of each chapter varied and interesting devices are provided for summarization and review. They include such projects as: Questions to Answer; Sentences to Finish; Learning About New Words; Learning About Sounds; and, Something to Think About.

Ninety-one well selected pictures give ample illustrations for the book. Many of the pictures cover a full page, but the majority cover a half page and all extend out to the edge of the paper. Seventeen black and white maps are included and their use is encouraged by suggestions in the text.

At the close of the book an Appendix is found which gives statistical data on size, population, geographical features and cities. Also an excellent Glossary is provided.

The second book of the series. *Great Britain and Canada,* written by Mary Russell is presented in quite a different style, but is equally well written and pupils in the elementary grades will enjoy it from beginning to end. Of the fifteen chapters in the book, nine are devoted to Great Britain, four to Canada and two take the reader to Bermuda and some of the islands in the West Indies. The transition from Great Britain to Canada is made by a most natural device, an ocean trip.

The author uses the journey method and a conversational style, and it appears to this reviewer that the device is quite naturally and skillfully used. The chapter headings indicate the extent of the travels: A Day in London; The Bridges Across the Thames in London; From London to Northern England; Visiting a Castle in Scotland; Looking at Northern Ireland; Visiting King Arthur's Castle; Going Down into a Coal Mine; Climbing a Mountain in Wales; Heading Out into the Atlantic; Hearing about Eskimos and Dog Teams; Talking with a Canadian Boy About Canada; Hearing About Wheat Fields and Ranches and Parks; Visiting Bermuda; Discovering Bananas and Flamingoes in the West Indies.

As in the case of the first book the vocabulary is well chosen, new words italicized, and explained and interesting devices for review are included at the close of each chapter. The book contains one hundred and eighteen black and white pictures, and seventeen maps. A Glossary of terms and place names appears at the close of the text.

Geography teachers in the elementary grades looking for new and interesting supplementary materials will find the books in this series very acceptable additions to their school libraries. Even an adult finds them fascinating reading, and this reviewer would put them on a high priority list for any school library.

INA CULLOM ROBERTSON

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